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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

re PATENT APPLICATION of:
HUTTUNEN

Confirmation Number: 4662

Application No.: 09/700,951

Group Art Unit: 2634

Filed: November 21, 2000

Examiner: PERILLA, JASON M.

Title: DETECTION OF INTERFERING SIGNAL IN RADIO RECEIVER

September 8, 2005

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REQUEST FOR RECONSIDERATION

Mail Stop Non-Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the final Office Action dated June 10, 2005, the date for response to which is September 10, 2005, please reconsider the patentability of the pending claims based on the following remarks.

By this Response, no claims are amended, added, or canceled. Accordingly, claims 1-2, 4-6 and 8-10 remain pending in the patent application.

Claims 1, 4, 5, and 8-10 were rejected under 35 U.S.C. §103(a) based on Love *et al.* (U.S. Pat. No. 5,363,412) (hereinafter “Love”), in view of Dent *et al.* (U.S. Pat. No. 6,567,475) (hereinafter “Dent”) and further in view of Wallerius *et al.* (U.S. Pat. No. 6,192,038) (hereinafter “Wallerius”). Claims 2, 4, 6 and 8 were rejected under 35 U.S.C. §103(a) based on Love in view of Dent and Wallerius and further in view of LaRosa *et al.* (U.S. Pat. No. 5,323,421) (hereinafter “LaRosa”). Applicant respectfully traverses these rejections because Love, Dent, Wallerius, and LaRosa, taken individually or in combination, fail to disclose, teach or suggest all the features recited by the rejected claims.

For example, Love, Dent, Wallerius and LaRosa, taken individually or in combination, do not disclose, teach or suggest a method of detecting an interfering signal in a

time division multiple access (TDMA) radio receiver, the method comprising, among other things, “comparing the error estimate representing the erroneousness of the signal path generated with a predetermined threshold value; and recognizing the reception of the interfering signal if the error estimate is greater than the predetermined threshold value, wherein the error estimate representing the erroneousness of the signal path generated is a signal path error metric which is generated by means of quadratic errors which are calculated on the basis of a difference between individual symbol sequence specific sample points and corresponding reference constellation points constructed on the basis of a channel estimate describing a state of a radio channel used” as recited in claim 1 and its dependent claims.

In addition, Love, Dent, Wallerius and LaRosa, taken individually or in combination, do not disclose, teach or suggest equipment for detecting an interfering signal in a TDMA radio receiver, wherein the equipment is arranged to “compare the error estimate representing the erroneousness of the signal path generated with a predetermined threshold value, and to recognize the reception of the interfering signal if the error estimate is greater than the predetermined threshold value, and the equipment is arranged to use a signal path error metric, which is generated by means of quadratic errors calculated on the basis of a difference between individual symbol sequence specific sample points and corresponding reference constellation points constructed on the basis of a channel estimate describing a state of a radio channel used, as the error estimate representing the erroneousness of the signal path” as recited in claim 5 and its dependent claims.

Furthermore, Love, Dent, Wallerius and LaRosa, taken individually or in combination, do not disclose, teach or suggest a method of detecting an interfering signal in a TDMA radio receiver, the method comprising, among other things, “comparing the error estimate representing the erroneousness of the signal path generated with a predetermined threshold value; and recognizing the reception of the interfering signal if the error estimate is greater than the predetermined threshold value, wherein the error estimate is at least in part generated by individually determining a plurality of point to point quadratic error comparisons between the generated signal path and a reference signal path” as recited in claim 9.

Likewise, Love, Dent, Wallerius and LaRosa, taken individually or in combination, do not disclose, teach or suggest an equipment for detecting an interfering signal in a TDMA radio receiver, wherein the equipment is arranged to “compare the error estimate representing the erroneousness of the signal path generated with a predetermined threshold value, and to recognize the reception of the interfering signal if the error estimate is greater than the

predetermined threshold value, and the equipment is further arranged to at least in part generate the error estimate by individually determining a plurality of point to point quadratic error comparisons between the generated signal path and a reference signal path" as recited in claim 10.

As conceded by the Office Action, Love does not disclose, teach or suggest the above recited features. Rather, the Office Action relied on Dent, Wallarius and LaRosa as allegedly teaching these features. Applicant respectfully disagrees for at least the following reasons.

As mentioned in Applicant's Request for Reconsideration of March 17, 2005, Applicant respectfully submits that Dent is not prior art because the perfected priority date of the present application antedates the filing date of the Dent reference, which is December 29, 1998. In response, the Office Action indicated that, although Dent is not prior art, Dent is submitted as evidence of the state of the art and, as such, does not need to antedate the priority date of the instant application. Applicant respectfully submits that this argument lacks merit.

MPEP §2124 sets forth the exception to the rule that the critical reference date must precede the filing date. MPEP §2124 states that "in certain circumstances, references cited to show a universal fact need not be available as prior art before applicant's filing date". However, MPEP §2124 also states that "such facts include the characteristics and properties of a material or a scientific truism." In the present case, the Office Action does not use Dent's teachings to show a universal fact or a scientific truism or as an indicator of the level of one of ordinary skill in the art, but merely to remedy the deficiencies of Love and Wallerius.

The Office Action asserted that the Dent reference merely serves to clarify what is already implied by Love and readily understood by one of ordinary skill in the art. (See Office Action at page 2, paragraph 4). In response, Applicant respectfully submits that if Dent's teachings were merely used to show a universal fact or as an indicator of the level of one of ordinary skill in the art, as contended by the Office Action, the Action should include additional references showing Dent's teachings, at or around the time the invention was made. Applicant respectfully submits that non-prior art references that have been held acceptable by the Court to show the level of ordinary skill in the art or universal facts cite multiple relevant references bearing publication dates at or around the time the invention was made. (See *Ex Parte Erlich* 22 U.S.P.Q. 1463 (Bd. Pat. App. & Inter. 1992)). Furthermore, Love does not disclose, teach or suggest that quadratic errors are calculated, as conceded by

the Office Action. As such, the Office Action's reliance on Dent to teach that quadratic errors are calculated is clearly improper, per MPEP 2124.

Wallerius does not remedy the deficiencies of Love. Wallerius merely relates to a communication system having a plurality of forward channel communications and a plurality of corresponding reverse channel communications. (See col. 5, lines 50-53). However, Wallerius does not teach or suggest detecting an interfering signal in any way. Furthermore, Wallerius does not teach or suggest detecting an interfering signal in a time division multiple access radio receiver, as in claims 1-2, 4-6, and 8-10.

Specifically, Wallerius does not disclose, teach or suggest comparing an error estimate representing the erroneousness of the signal path generated with a predetermined threshold value. Instead, Wallerius merely teaches judging signal quality as poor if the signal-to-noise ratio is below some threshold. (See col. 14, lines 20-30). Wallerius is, however, completely silent about comparing an error estimate representing the erroneousness of the signal path generated with a predetermined threshold value.

Furthermore, Wallerius does not disclose, teach or suggest recognizing the reception of the interfering signal if the error estimate (representing the erroneousness of the signal path generated) is greater than the predetermined threshold value. Instead, Wallerius merely teaches whether a particular burst should be excluded from aggregation on the basis of the signal. (See col 14, lines 25-28). This, however, has nothing to do with the recognition of an interfering signal on the basis of an error estimate representing the erroneousness of the signal path generated.

Contrary to the Office Action's assertion, Wallerius' teachings are by no means analogous to the above claimed features. In particular, Wallerius makes no distinction between a wanted signal and an interfering signal. In Wallerius, all bursts having a poor signal-to-noise ratio are excluded from the aggregation. Applicant respectfully submits that the mere classification of bursts on the basis of signal-to-noise ratio, as suggested by Wallerius, does not enable one to distinguish an interfering signal from a wanted signal because the signal-to-noise ratio, *i.e.*, a ratio of the power of the required signal component to that of the noise component, is not indicative of the type or content of the signal. It is respectfully submitted that a signal with a low signal-to-noise ratio could either be a wanted signal or an interfering signal.

In addition, Wallerius does not teach or suggest that the error estimate representing the erroneousness of the signal path generated is a signal path error metric which is generated by means of quadratic errors which are calculated on the basis of a difference between

individual symbol sequence specific sample points and corresponding reference constellation points constructed on the basis of a channel estimate describing a state of a radio channel used.

Furthermore, LaRosa does not remedy the deficiencies of Love and Wallerius. LaRosa relates to a method and an apparatus for channel quality estimation (CQE) in a receiver, but is silent about the above mentioned features.

As such, any reasonable combination of Love, Dent, Wallerius and LaRosa cannot result in any way in the invention of claims 1-2, 4-6 and 8-10.

Accordingly, reconsideration and withdrawal of the rejection of claims 1, 4, 5, and 8-10 under 35 U.S.C. §103(a) based on Love in view of Dent and Wallerius, and claims 2, 4, 6 and 8 under 35 U.S.C. §103(a) based on Love in view of Dent and Wallerius and further in view of LaRosa are respectfully traversed.

The rejections having been addressed, Applicant respectfully submits that the application is in condition for allowance, and a notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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